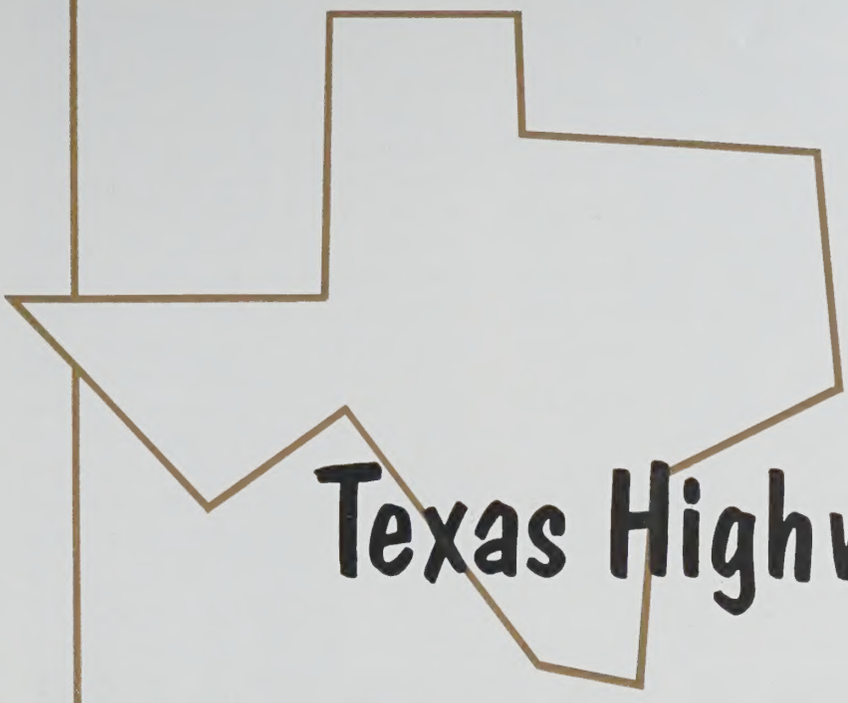
# Texas Highways

SEPTEMBER 1957 35c

## SOMETHING NEW . . .

Beginning with this issue, TEXAS HIGHWAYS becomes available to the general public for the first time on a subscription basis. Single copies are 35 cents, and a year's subscription is $3.50.

Anyone may subscribe to the magazine. Checks or money orders should be made payable to the Texas Highway Department and mailed to the Information and Statistics Division, Texas Highway Department, Austin 14, Texas. An increasing number of requests for the magazine and action of the last Legislature have made it necessary for the Department to levy this charge.



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Volume 4 • Number 11

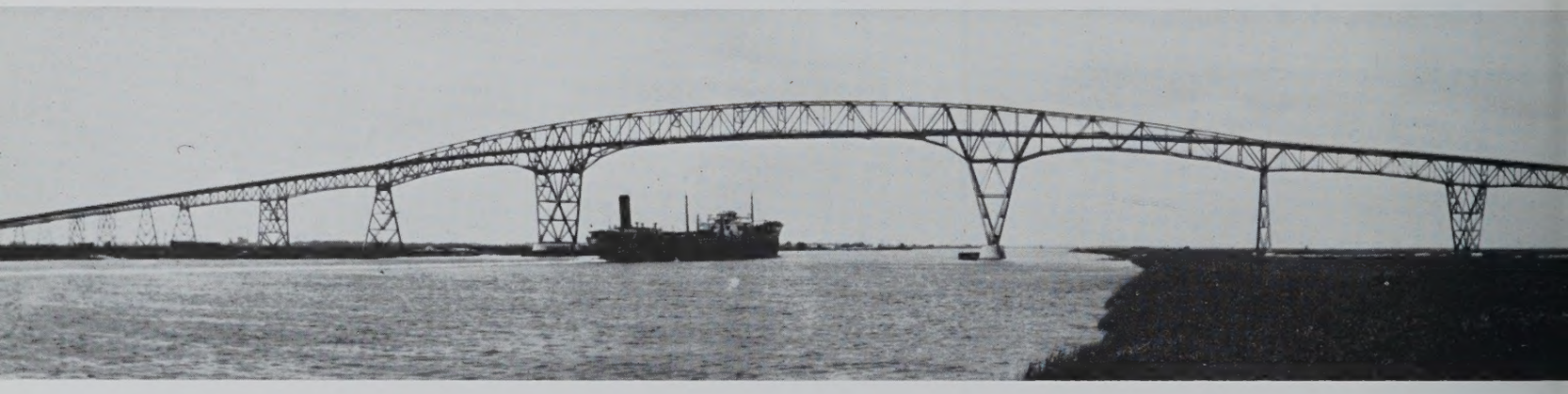
September, 1957

## Contents

| | |
|---|---|
| Daredevil Paint Job | 2 |
| New Look in Warehousing | 4 |
| Vehicle Registrations | 9 |
| Women in the Information Bureaus | 10 |
| Expressway-type Improvement | 12 |
| Modernizing Highway Bridges | 15 |
| Evolution of a Rigid-frame Bridge | 19 |
| Growing Pains | 28 |
| Engineering Show | 30 |
| Over the Highways | 31 |

# DAREDEVIL PAINT

***Nella Dieter, Information Clerk***
***Information and Statistics Division***



ALMOST any day of the year—if the coastal winds aren't too high and the coastal rains aren't torrents—three men invisible to the casual eye are painting on the South's highest bridge spanning a navigable stream.

This Neches River Bridge, sometimes referred to as the Neches High Bridge or the Orange High Bridge, on State Highway 87, receives the attention of human hands every work day weather permits. Beneath its 176-foot vertical clearance, ocean-going and Texas-returning ships glide like simple toys. Over its 7,752 feet of roadway, vehicular traffic moves ceaselessly, as though controlled by an electric switch. This bridge is the vital commercial link between the petro-chemical regions of Texas and Louisiana.

The work crew swinging somewhere on the superstructure or substructure will sometimes number more than three men; but during the past two years when District 20 began a project of spot painting the bridge, there have been but few additions to the ranks of the three Highway Department steadies. Painter Foreman is Charles Flurry, and the painters—pictured on the cover—are Virgil Ingram and Harold J. Ringer. These painters wear no special gear for the precarious work. Goggles and baseball caps with the bill turned backward are the only distinguishing attire they have acquired. Their all-important piece of equipment is a rope tied beneath their arms. The other end—on which a grappling hook is fastened—is tossed onto an overhead bridge member. The rope is then pulled taut when the painter braces his feet and rears back. Some days the spots to be touched up are in places where it is not possible for the painter to find space for a foot brace. These are times he must attach a dolly seat to the end of the rope opposite the grappling hook and attend to his day's work from the swing thus made.

Occasionally a new painter will try the work a day or two. But the Neches River Bridge does rise 230 feet high, and that picture in one's mind of the physical fate of a painter who fell three years ago is confirmed over noonday lunch buckets when the subject of bridge history comes up. So, most new painters decide after a very brief stint on that special, air-conditioned job that there are advantages in staying closer to terra firma.

Maintenance engineers consider the Neches River Bridge the biggest bridge paint job in the state in one of the worst areas for rust. Only a year after the ribbons had been cut for the opening ceremonies, District 20 received an idea of the painting problem which lay ahead on the notable structure under its jurisdiction. (In 1938 the bridge was famed as the highest highway bridge in the South but has since been succeeded in this distinction by the Pecos River Bridge.) Hurricane winds, slapping and slashing that part of the Coast for the first time since the bridge had been planted, took off the paint in sheets as big as the top of a top-executive's desk. When the bridge was built, 19,000 gallons of paint had been used in the four coats which the specifications of that day and time re-

quired. A red-lead base was followed by a first field coat of brown-tinted paint; second and third field coats were pinkish gray and aluminum, in that order. After that first hurricane, maintenance engineers decided high-velocity winds, a not infrequent phenomenon on the Coast, were going to be a nuisance to be reckoned with paint-wise.

The District has kept up with the latest in paint development in the nineteen years which followed until today a thick grease paint known as GR-3 is what the painters carry up in their buckets when they touch up rust spots on the Neches River Bridge. This GR-3 is a distinct development, because it eliminates the need for a coat of red lead. For ten years now it has been used by the Department in coastal area districts. For a while this grease paint was relied upon as a finish; but the dust and dirt which collected on bridge surfaces, and the resulting dingy, drab appearance of the structures, made its use as a finish coat unsatisfactory. Maintenance procedure on the Neches River Bridge is for the painter to apply GR-3 on rust spots, leaving this for about a month before brushing on a coat of aluminum paint. This last bright touch of aluminum paint has become practice on Texas Highway Department bridges all over the state. Its virtues are several: Hiding quality — it completely obliterates undercoats; good visibility; relatively moderate cost; and a fair degree of durability.

The last time the Neches River Bridge received a complete painting was early in 1954 when a private contractor's crew groomed it with spray guns and brushes and presented a bill for $71,126.16. Since 1955 the present plan of spot cleaning and spot painting has been used, and the painters are hired as full-time employees of the Texas Highway Department. It is predicted this method will lengthen the period between complete repainting projects.

# JOB

These casual painters are more than two hundred feet in the air over the Neches River in East Texas. They, with a compadre who was directing traffic around the TEXAS HIGHWAYS photographer when this picture was made, work daily covering rust spots which appear. Every morning after they are delivered to the bridge in a Highway Department truck they ascend to the spot which requires a touch-up, latch on, and get the job done.

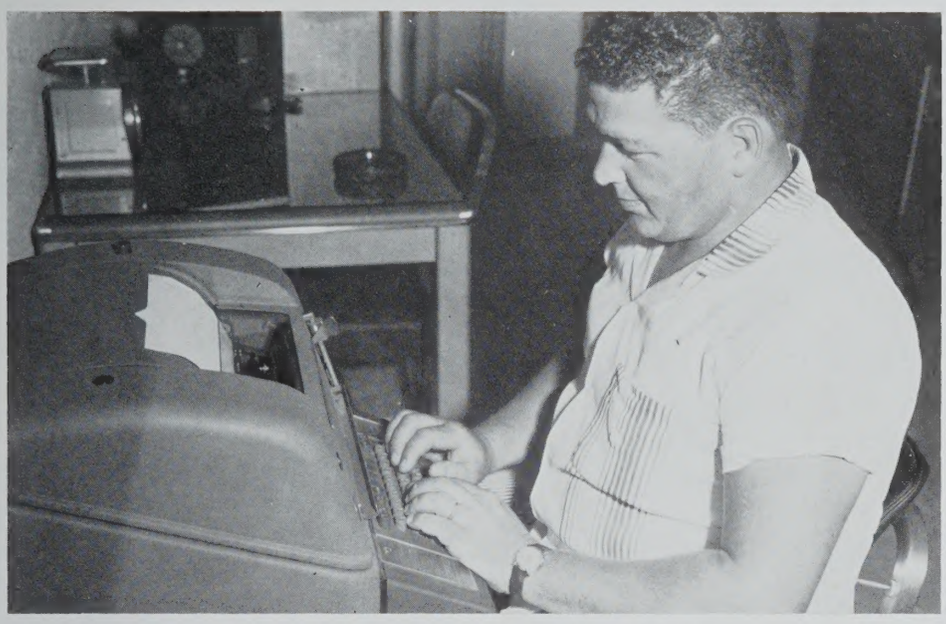
# New Look in

***Eugene G. Cuenod, Equipment Analyst***
***Equipment and Procurement Division***

The Texas Highway Department General Warehouse at Athens, and two others to be constructed in the very near future, incorporate materials-handling equipment and methods which should save the Department enough in one year of operation to pay for the equipment purchased. Since the estimated life of this equipment ranges from five to twenty years, the savings provided thereby could amount to a considerable sum of money. Speedier service to the districts is the theme of D-4's new general warehousing program.

The General Warehouse at Athens, as seen above from State 19, is the first of three proposed general warehouses to be placed in operation by D-4. Construction of the second, at Post, will begin soon.

# Warehousing



The teletype machine being operated by Chuck Johnson, Warehouseman at Athens, is the key to better service to the districts from the time the order is placed until the material is loaded on a truck at the dock.

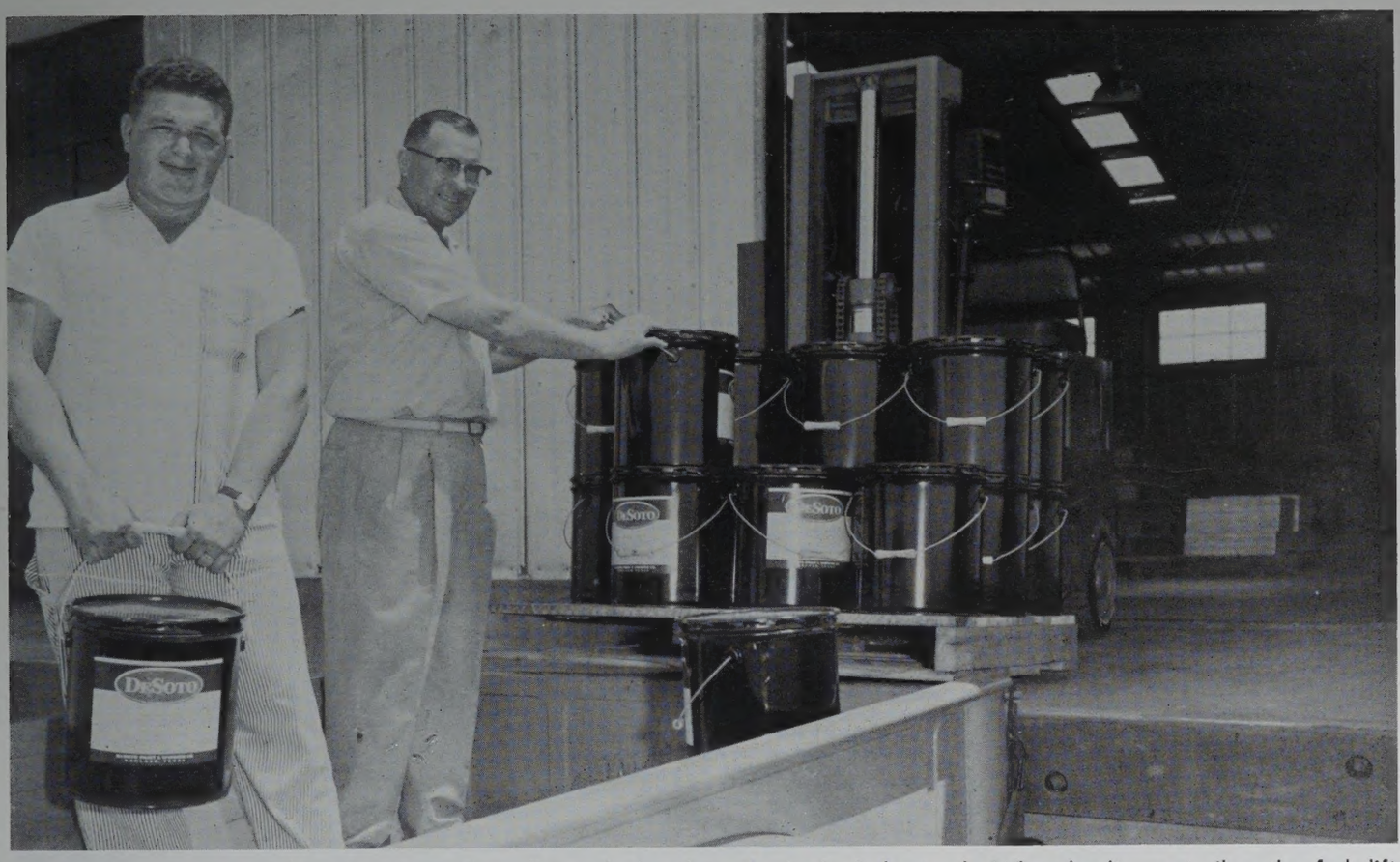
Fast loading of district trucks and trailers is assured with the dock facilities which accommodate all sizes of trucks and trailers.

Upon entering the warehouse, one is immediately impressed with the new look which features palletized storage of all bulk materials such as center-stripe paints and beads, bridge paints, naphtha, sign blanks, and other items stacked ten to twelve feet high.

Bin items are still handled in the same manner since they are not stored in quantities sufficient to justify palletization.

In a matter of seconds, Alfred Balzen, Senior Warehouseman at Athens, can transfer 120 gallons of paint or 1,800 pounds of center-stripe beads from the storage bay to a district truck at the dock.

Stacking a 1,665-pound load of paint ten feet high is no problem with a fork-lift truck and the proper size pallets. A minimum amount of labor and time is required to move such palletized materials in or out of permanent storage.




At the dock, the material is taken from the pallet and placed in the bed of the truck. When loading a trailer, the fork lift can be driven onto the trailer bed, eliminating the need for carrying the material manually more than a few feet. The operation is improved still more when serving those districts which now have fork lifts and pallets. A system of pallet exchange between the general and district warehouses permits transportation of the materials on pallets. This type of operation eliminates the need for individual handling until the items are dispensed for actual use on the highways.

Irregularly shaped pallet loads which cannot be stacked one directly upon another can be stored in fewer square feet of floor space by utilizing steel pallet racks for vertical storage.

Vertical storage of miscellaneous or unstackable materials is possible with the pallet racks, which make pallet loads of different items readily accessible to the fork-lift operator.

Inventory control is simplified by having materials stored on pallets in standard quantities and uniform stacks and rows.

CONCLUSION: When all three general warehouses are completed and stocked for full-scale operation, the districts will no longer be required to submit estimates of the quantities of center-stripe paints and beads needed. These materials, along with others, will *always* be available in whatever quantities the districts may require.

*License-plate View*

# Vehicle Registrations

The share of common stock in Texas highways, which you probably stood in line to buy at the last minute of the first of April so you could drive the family car with the benign approval of the law next day, has by now been reckoned with in the counting houses. Along with the rest of the more than four million other vehicle licenses bought in Texas, that license plate for your passenger car made revenue history.

The Motor Vehicle Division has just issued its annual "license-plate view" of the State of Texas. In this table, showing the number of motor vehicles tagged during the registration year just passed, the Division has painted a number picture which illustrates the heroic revenue proportions realized from sale of license plates.

An arresting fact brought to light by this latest Motor Vehicle report is this: From April 1, 1956, through March 31, 1957, a total of 132,982 vehicles was added to the traffic load. (An idea of how many motor-driven conveyances on wheels this encompasses can be visualized if one thinks in terms of equipping each man, woman, and child in the entire population of a town the size of Waco or Galveston with a vehicle of some sort.)

Passenger cars, of course, make up the greatest number of licensed vehicles, with commercial trucks running next; trailers (the commercial kind for hauling) and farm trucks rank third and fourth. All vehicles registered came to a grand total of 4,220,147.

Just what the term "motor vehicle" covers in this modern day is made clear in the Motor Vehicle Division's current table. In the order of number of licenses purchased, here are the categories:

| | |
|---|---|
| Passenger cars | 3,115,525 |
| Commercial trucks | 543,070 |
| Trailers | 214,189 |
| Farm Trucks | 182,438 |
| Truck Tractors | 43,448 |
| Motorcycles | 31,988 |
| House Trailers | 25,832 |
| City buses | 2,439 |
| Motor buses | 1,221 |
| Farm truck tractors | 1,041 |

Also, add to these the exemptions. Last year 58,636 vehicles owned by federal agencies, state departments, counties, cities, and school districts were exempt from license fees. These are the motor vehicles which wear a permanent license with an "X" prefix letter. "XH" denotes Highway Department vehicles, and "XS" is the prefix for all other state agencies. These licenses are permanent, in the sense that they remain unchanged during the years the exempt agencies own the vehicles. In 1948, when permanent plates were first issued, "XA" was used to designate federal agencies, county agencies, city, and school vehicles. Alphabetically the letters have progressed to "XJ," which is the prefix on licenses now being issued those same vehicles. "XA" and the other combinations may still be seen on the older vehicles belonging to such agencies. Comparing the current exempt registrations with those of 1955-56, an increase of 9,049 is noted. More commercial trucks receive exemptions than do vehicles in any other category. These "X" licenses appear on exempt buses, trailers, passenger cars, truck tractors, and motorcycles.

(In an interview, the Motor Vehicle Division added these items to the license lore which most every one seems to collect: The two-letter combinations "BS" and "SB" are never used — social reasons. License plates never wear a "G," "I," "O," or "Q"— these letters are confusing to the eye. "G's" may be mistaken for "C's"; "O's" and "Q's" look too much like "C's" and "D's," and the letter "I" might be erroneously identified as the numeral "1."

The first motor vehicle license is AA 10, which goes to a purchaser in Bastrop County. Bastrop is the first county, alphabetically, in those which compose District 14 of the Texas Highway Department. License numbering begins in that District, then progresses from District 1 on down the line. When AA 9999 has been reached, the letter prefixes change to AB, and licenses start again with AB 10. With 21 letters of the alphabet having been used in combinations for the whole state this year, there is talk of the necessity of working out a new control letter scheme within the next few years to take care of the registration increase expected.)

A backward glance shows that only four times since the Highway Department was organized in 1917 has the percentage of registered vehicles decreased from the year before. Those were the depression years of 1931 and 1932, and two years during World War II—1941, 1942.

That share in Texas highways you bought earlier this year when you paid a car license fee is now returning you the best dividend in the state's history. Better drive over the nearest expressway or super highway and collect.

# Women in

The change-over from men to women attendants in the Travel Information Bureaus began at the Waskom Bureau where Mrs. Reba Gibson (left) and Mrs. Laverne Hudson (standing) were the first to assume duties. All types of current road information, maps, Texas Highway Department literature and that of chambers of commerce, are available at these stations.

COMBINE that natural quality known as "woman's intuition" with the studied art of giving directions, and don't be surprised when the tourists who drive away from the Travel Information Bureaus maintained by the Texas Highway Department write back as did recent visitors from New York, "The young lady at the Information Bureau was wonderful, and because of her we stayed a week longer than expected."

In terms of additional gallons of gasoline, meals eaten, lodgings rented, dollars spent at recreation places and in stores, an additional week spent in Texas (multiplied by many such carloads of charmed visitors) totes up handsomely in coin of the realm.

The first women employed as Bureau Attendants began their work in February. One of the major influences in the decision to make the eventual change-over was the Highway Department's remodeling and rebuilding program for the Bureaus. Modern office accommodations and the fact that cities and towns have stretched out to meet the Bureaus so they are no longer in remote places, make these highway hospitality headquarters suitable for women workers. It was felt, too, that due to the large turnover of male attendants leaving for better paying jobs, women would be more permanent. Men will remain in supervisory positions in the Bureaus, while the ladies will handle over-the-counter work.

On February 1 Mrs. Reba Gibson and Mrs. Laverne Hudson filled resignations in Waskom. The following week in Orange tourists were greeted either by Mrs. Frances Carter or Mrs. Martha Shapiro. Before beginning their work, the new Bureau Attendants finished the same training course in the techniques of stimulating and promoting Texas travel which was given their men predecessors. All are taught to aproach the directing and promoting of travel from a scientific standpoint. "Encouraging visitors to travel more miles and stay longer in

# the Information Bureaus

Texas by selling vacation spots to the motoring public,"—words from the comprehensive Training Manual—they know is one of the major purposes of the Bureaus. With tourist activity at the Bureaus this year running 35 per cent over that of 1956, the Attendants will have ample opportunity to practice the psychology they found on the pages of the Manual. They have been tutored to observe tourists with an eye for clues which reveal personal interests. No suggestion of Starlight Opera to a sportsman with fishing gear and camping equipment in tow. On the other hand, the serious-minded school teacher may delight to have the location of colleges and universities, art galleries, and museums along the route. If a married couple occupies the car, usually the wishes of the woman dominate what Texas attractions the Bureau Attendant will try to sell. If a child is part of the traveling party, in nine cases out of ten, the recreation demands of the juvenile will determine the selling approach.

When he departs, a tailor-made vacation mapped out to suit his taste in recreation will be in the pocket of this tourist who has stopped at the Travel Information Bureau in Waskom. Mrs. Reba Gibson, woman attendant at the Bureau, will re-enact this scene many times each day throughout the whole year.

For the first time since 1936, the Texas Centennial year when Travel Information Bureaus began operation, women are employed in two of the seven border-located Bureaus. Women attendants like Laverne Hudson at Waskom sell Texas to out-of-state visitors and chart the high spots for Texans making a trek elsewhere.

Issuance of permits for oversize and overweight vehicles is one of the routine duties at any Bureau, so the women have taken over this duty also. Since January the Orange and Waskom Bureaus have issued a total of 1,613 permits, and the Bureaus are expecting an increase in this phase of their work since overlength house trailers are now legally permitted to move through the state.

An official uniform for the new Attendants has yet to be decided. "Something economical . . . something available at all Bureau locations . . . something with Texas styling"—the specifications are difficult. But how does that old saying go? "Never underestimate the power of a woman!"

*Through Calallen*

# Expressway-type Improvement

***Harry Hopkins, Senior Resident Engineer***
***District 16***

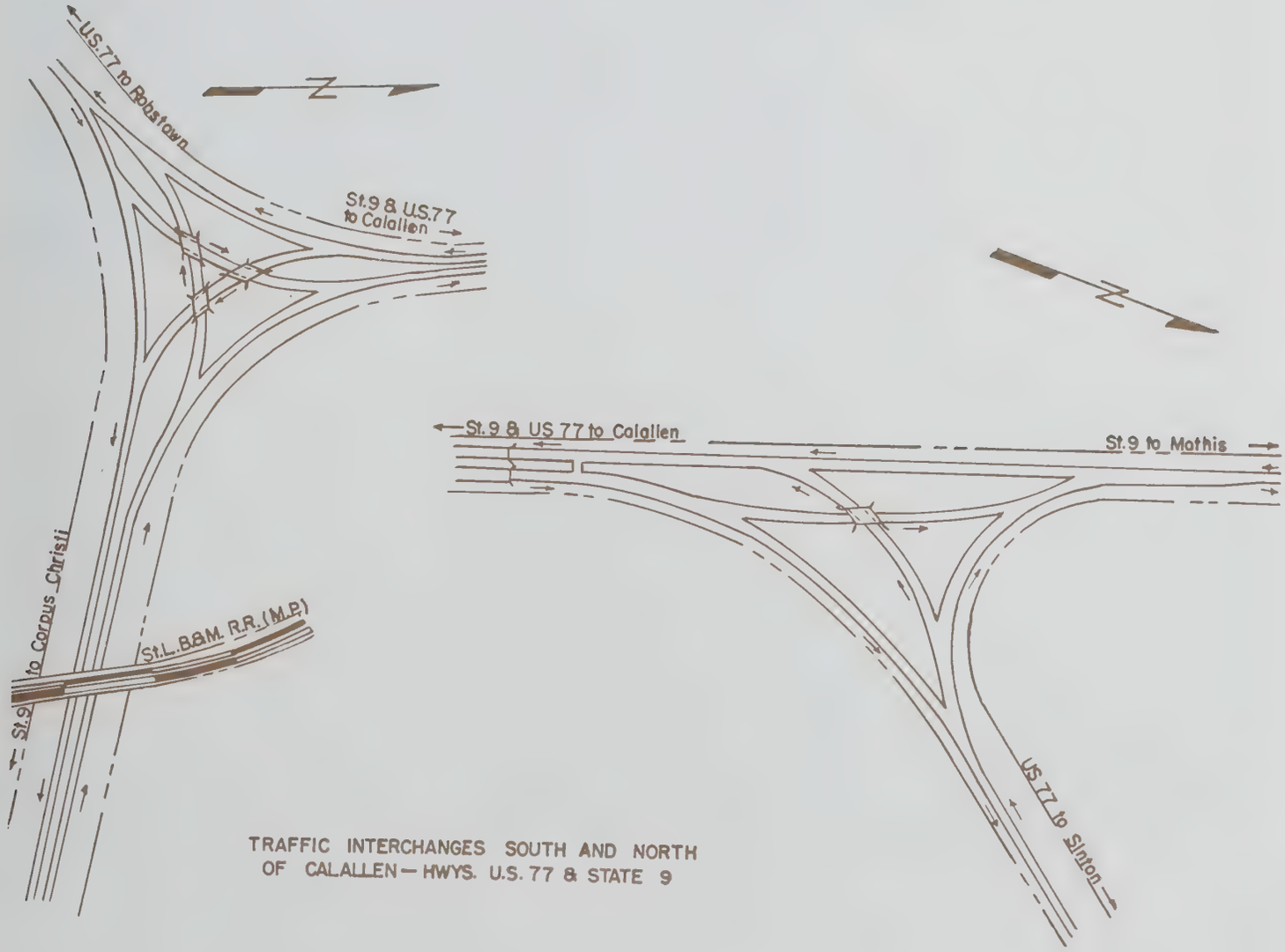
Calallen, a village in Nueces County by the river of the same name, is shortly to become known for features additional to its picturesque scenery and local legends. Two of the state's major highways (U. S. 77 and S. H. 9) are combined through this community and the vastly improved road facilities will make this junction an important location to all South Texas.

Traffic between San Antonio and the Rio Grande Valley, Houston and the Valley, and voluminous movements in and out of the Corpus Christi metropolitan area north, west, and south are requiring and getting means of safe, rapid transit through the entire community with local movements being confined to two-way frontage roads serving adjacent properties in the business section. Also, facilities will be provided for access to the park area along the Nueces River between the town and the river crossing.

Through traffic will traverse the town by means of two one-way 38-foot curbed roads separated by a raised concrete median. North of town, crossing bottom land and the

Corpus Christi's water filtration plant can be seen from this view looking south at a portion of the three-structure south interchange for State 9 and U. S. 77.

The fill for the grade separation at the north interchange of State 9 and U. S. 77 begins to take shape. This interchange is located on a small sand hill in the Nueces River bottom.




TRAFFIC INTERCHANGES SOUTH AND NORTH OF CALALLEN — HWYS. U.S. 77 & STATE 9

Looking north in Calallen, the crest of the hill in the left background will be the site of a future crossover to serve local traffic.

The same hill crest with the cut for through-way lanes partially made, and with the east abutment of the cross-over bridge in place.

river, each of the two roads will be 24 feet wide with sealed shoulders. The road for southbound traffic will follow the existing road, and a new northbound road—100 feet to the east—will cross a new bridge at the river.

It is three and a half miles from the end of the present divided highway development of State Highway 9 to the extreme north end of the project. Heading west from the end of the present divided highway, the curbed sections will go under the Missouri Pacific Railroad by way of a new divided underpass, each of the two openings wide enough for three lines of one-way traffic. Beyond the railroad, at the south side of Calallen, is a junction of U. S. 77 and State Highway 9, north and south for U. S. 77 with State Highway 9 coming in from the east. The resultant six traffic movements will each be carried on its own road by three grade separations. Geometrics of the curves of this interchange are developed for a safe speed of 50 miles per hour. Near the original Calallen schoolhouse will be a traffic and pedestrian bridge connecting the frontage roads. One "off" ramp to each frontage road will be provided within the town limits. The others, with the "on" ramps, being outside the town limits, make for a combination of fast through movement and local safety.

North of the Nueces River, the turning movement from north to east, or the reverse, is almost nothing. At this interchange (again U. S. 77 and State Highway 9) one grade separation bridge will be used for northbound State 9 traffic to cross over the west and southbound U. S. 77 movement, which will merge with southbound State 9.

Both interchanges are designed to fit future four-lane development of U. S. 77, either south to Robstown and the Valley or northeast toward Houston. Traffic will be safely controlled by a few signs, and signal lights will be unnecessary.

Completion of this entire job will eliminate a serious bottleneck of long standing and the finished construction, conforming to the usual Texas Highway Department standards, will be an interesting scenic item.

# Modernizing highway bridges

## Two methods for modernizing bridge railing are discussed in the following articles from Districts 18 and 25.

## District 18 lowers the existing railing.

*Frank W. Cawthon, District Engineer*
*District 18*

Commonplace practice today for the remodeling of old highway bridges is to lower high concrete post railings. The first such job in District 18 not only improved the appearance and utility of the bridges involved but also pressed into service the old pipe which was removed.

The job, in 1953, involved the lowering of 4,240 linear feet of railing on Richland Creek and Richland Creek Relief Bridges in Navarro County on U. S. 75. Cutting the concrete posts off just above the bottom pipe rail and finishing off the tops was completed at a cost of $3,586.30, which amounted to approximately 85 cents per linear foot of railing. The posts, as constructed, were three feet three inches high above the top of the curb, making them four feet three inches above the roadway of the bridge. The decrease in height was approximately one foot six inches, which gave the bridges the appearance of having been widened. A good grade of two and one-half inch in diameter galvanized pipe had been used for the rail, and the old pipe removed was used for water lines at the District's new maintenance warehouses which required connecting with the city main.

Bridge railings on Richland Creek Bridge stood four feet three inches above the roadway before being lowered.

After cutting concrete posts off, the railings stand two feet nine inches above the roadway—a drop of one and one-half feet.

In addition to the safety factor, lower railings present a modern appearance.

Work similar to that on the Richland Creek Relief Bridge was done on this bridge on U. S. 287, Ellis County, over Mustang Creek.

# District 25 replaces old railing with flexbeam railing.

***Robert L. Nabers, Assistant District Engineer***
***District 25***

Greater safety from overhanging truck widths, the illusion of a wider bridge encouraging drivers to stay closer to the curbs, and an over-all trim appearance top the list of reasons for replacing old high concrete post railings with modern low flexbeam railings.

We feel the method we used, in which five-inch H-beam posts are set on the outside of the old curb haunches, may be worthy of consideration because of the low cost. On three bridges on U. S. 83, north of Paducah, the five-inch H beams were cut to proper lengths and the holes were drilled in the District shop. Cover plates, slightly larger than the old concrete posts, were cut from salvaged one-fourth-inch traffic tread. The three-by-three-inch angles were also cut, drilled, and welded to the cover plates in the shop. The long one-half-inch bolts were ordered with additional threads to allow for the two-nut adjustment and tolerance for lining up the posts. (We specified the slender bolts so damage would not be done to the I beams should the posts ever get hit.) The welds were made only halfway around the bolt heads attached to the beams so they could give easily, since the securing of the post alignment is the only purpose of these bolts.

In removing the old concrete rail posts a small protrusion of the reinforcing was left in place. By means of a framed wire screen the same size of the plates, and chalk for dotting the points, the exact relative location of the reinforcing was transferred to the plate for cutting the matching holes. With the plates set in true final position, the holes were filled with weld, tying the plates down to the reinforcing bars.

Expansion was provided in the railing at each bent by field cutting the railing as required. The lap of the railing was bolted in the usual manner. The railing was attached to the posts by weld since the span, or continuous rail, length is only 28 feet 6 inches long. The post spacing

**The old type high bridge railing gives motorists a feeling of narrowness which causes them to pull toward the middle of the bridge.**

**The finished product, looking along one line of the new railing, gives an over-all look of expanse.**

This bottom view shows the bolt head welded to the I beam and holding post alignment by nuts. Bolt holes were slotted to allow for vertical field adjustment of the posts.

The plate is welded to the old rail reinforcing on top of the curb and post bolted to angle.

remains six feet ten and one-half inches.

The total cost of removing and replacing the 3,810 feet of railing on the three bridges was $19,308.86, or $5.07 per linear foot, including the painting and cost of all materials. We doubt that this work could have been done at this low unit cost or that it could have been done as quickly and safely on the site if the customary method of drilling holes and setting anchor bolts in the concrete had been used. Rigid erection resulted with good alignment. The plates, now painted aluminum, blend in with the concrete curb and are hardly noticeable. This work was done by our maintenance organization under the supervision of R. D. Waltermire, Construction Superintendent.

# Evolution of

# a rigid-frame bridge

*C. H. Barclay Jr., Senior Resident Engineer*
*District 9*

In the construction of 10.185 miles of U. S. 81 in Bell County, it was necessary to incorporate a rigid-frame bridge, the first such structure to be built in District 9. This structure was erected in Troy, Texas, five miles north of Temple. The rigid-frame type of structure was deemed necessary because of limited right of way through the town site.

The roadway cut in this section was through the Austin chalk formation, with the colors ranging from very white on the top twelve feet to a deep blue color on the bottom (from twelve to twenty-two feet). The sides of the cut were limited to a one-half to one slope to be able to accommodate two 36-foot main lanes and a four-foot median strip.

These steep roadway slopes are held in place by a retaining wall eighteen inches thick at the bottom and ten inches thick at the top, and conforming to the same slope as the cut. Behind this wall was placed six-inch diameter Type "B" pipe underdrain to remove any subsurface water. An indication of the subsurface water problem was shown when three small springs, each flowing at the approximate rate of four gallons per minute, were encountered during the excava-

Going up: lay-back retaining walls and rigid-frame footings . . .

tion for the retaining wall footing.

To level up and form a support for the form columns, Class "B" concrete sills, two feet by six inches, were poured between the footings.

Abutment forms were then placed and the erection of the form columns begun. The form columns were comprised of green oak and elm logs cut from the banks of a nearby stream. These columns were spaced on two and one-half-foot centers perpendicular to and on four-foot centers parallel to the roadway. There were 377 columns required to hold the deck forms in place—29 rows of 13 columns each. Before the columns were set in place, eight- by eighteen-by three-inch oak wedges were placed on the concrete sills to permit adjustment of the forms to the required grade. As the columns were erected and sawed to grade, eight- by eight-inch caps were set in place atop the columns. After completion of the cap placement, two- by four-inch deck joists on eight-inch centers were set and very accurately positioned to grade before the three-fourths-inch plywood deck was installed.

From the beginning of the form erection, one-half-inch deflection was allowed for dead load and wood compression, and during the concrete placement a careful check was kept to determine deflection at all critical points. At no point did the deflection exceed five-sixteenths inch, and the average was one-fourth inch.

Concrete was furnished the contractor by a commercial ready-mix plant using transit mix trucks. A normal five-sack concrete design was used for the concrete of this structure, with above-average results being obtained from the test beam breaks. An average of 770 psi, five-day flexural strength, was recorded on the twenty beam breaks made on this structure.

Form removal was accomplished by cabling the wedges from beneath the log columns with the aid of a D-8 dozer. This operation was begun only after a test-beam break of over 500 psi flexural strength was recorded and seven days after the last pour. During the removal of the form columns, a careful check was kept to determine any settlement in the center of the arch. A one-eighth-inch settlement was recorded. This check was repeated at 14 and 28 days, and no settlement was found to be evident.

The aesthetics of this structure are further enhanced by the addition of a special picket railing and also by the amount of arch placed in the profile grade of the slab.

Total cost for construction of this structure was $41,706.08.

rigid-frame footings and concrete sills for falsework . . .

rigid-frame footings and leg forms . . .

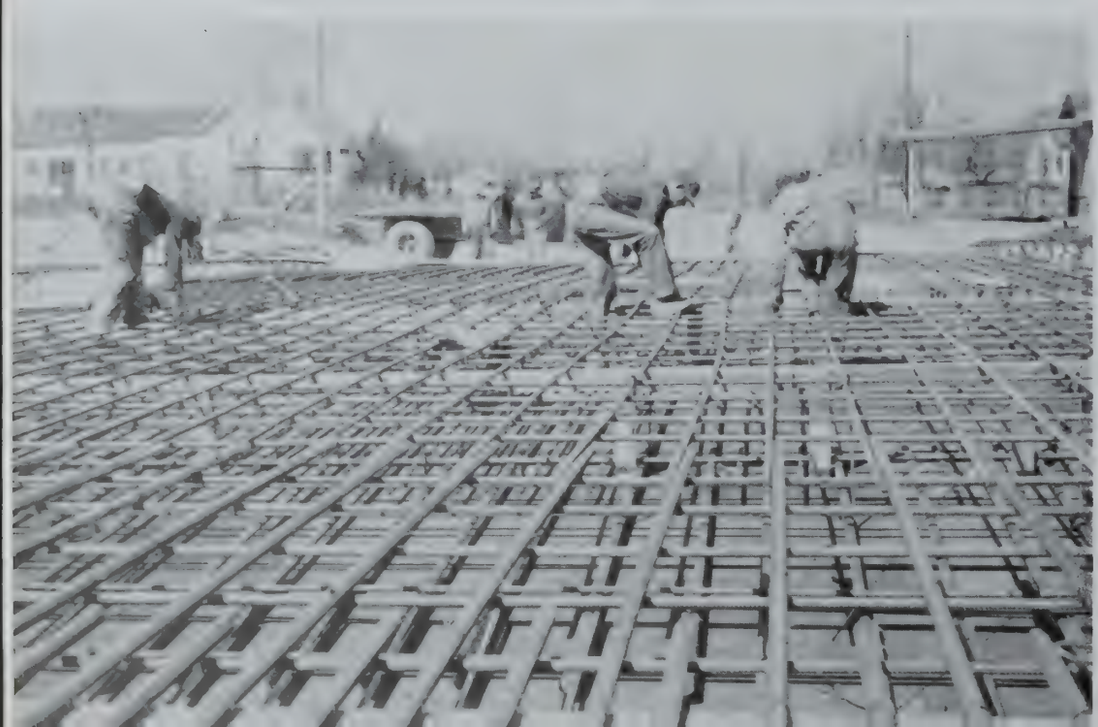
timber columns . . .

and more columns, timber caps, and timber stringers.

Partially decked falsework . . .

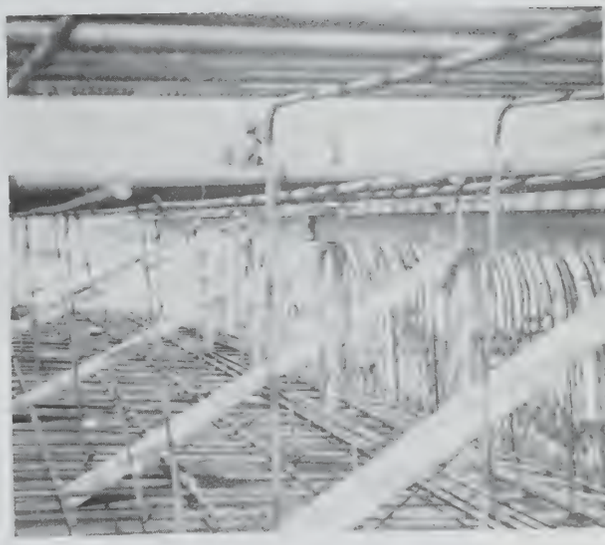
becomes completely decked falsework with positive moment reinforcing.

Reinforcing steel arrangement . . .



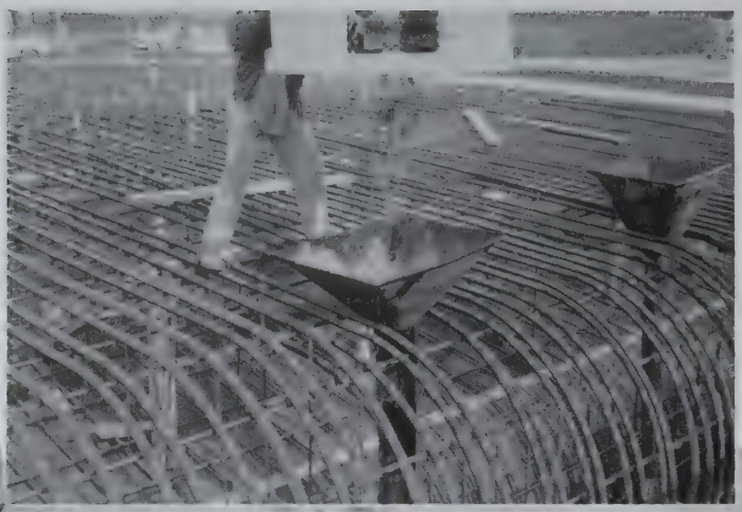
a close-up view . . .

at the leg . . .

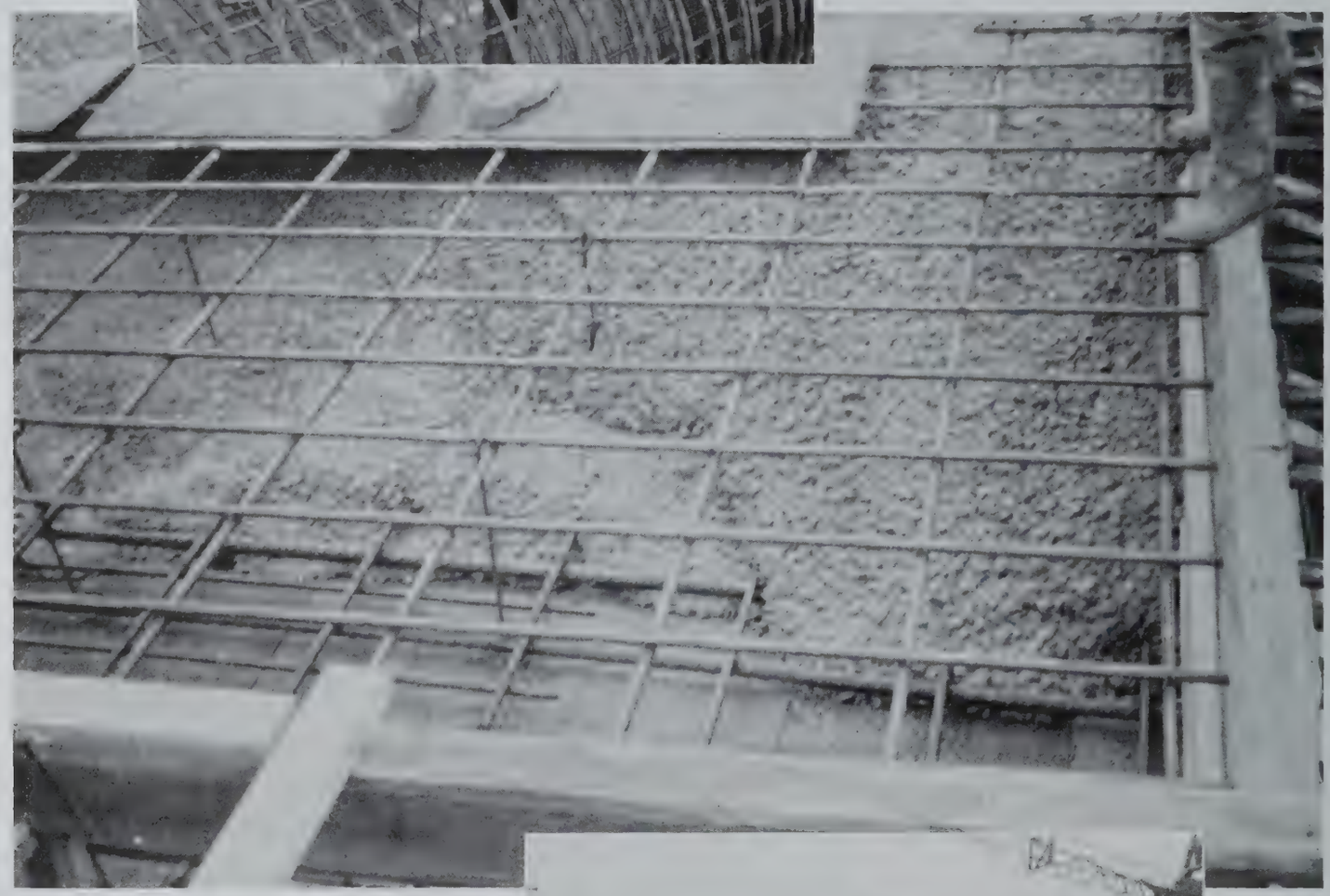


looking through the curb . . .

and from a distance.



Concrete is placed—in the leg . . .



near the curb . . .

and in the deck.

Side forms have been stripped.

With the aid of a bulldozer . . .

soffit forms . . .

come down.

Subsurface water pours through the underdrain.

Finished . . .

the structure is a thing of beauty . . .

enhanced by picket railing.

1. These wooden models in the State Building Commission's office situate the two new buildings as they will look from overhead with relation to the pink granite Capitol. (State Office Building on the east, the Supreme Court Building on the west.)

2. An architect's idea of the State Office Building, fitted into place northeast of the Capitol. Contracts have been let for erection of the building, which will cost $3,755,821.

3. Already under construction, the Supreme Court Building, northwest of the Capitol, is the first building in the long-range Capitol Area Master Plan. This architect's rendering shows the new edifice as it will be seen with the Capitol Building in the background.

2.

1.

# In Austin

THERE are those who consider the 23 years until 1980 only a short time away. By calculations more reliable than crystal gazing they know that by 1980 the Texas state government will require some 30,000 administrative employees and that 12,000 of those employees should be located in the Capitol area. Accommodations for that many human beings in a centralized location—their offices, rest rooms, parking spaces, corridors, mechanical spaces—is the 1980 goal at which the carefully laid, long-range Capitol Area Master Plan is aiming. The transformation, already begun, will completely change an estimated 77 acres

3.

# growing pains

between the Capitol and the University of Texas campus.

The first building to be fitted in place in the Master Plan is the new $3,393,116 Supreme Court Building now under construction northwest of the Capitol Building. Contracts have also been let for erection of a $3,755,821 State Office Building directly northeast of the Capitol Building and across from the Court Building.

Although modern in architecture, these two new buildings will nevertheless be companion pieces to the classic Capitol. The same Granite Mountain near Burnet, which 75 years ago supplied the pink granite of which the Capitol is built, will this time yield the building material for the Capitol's contemporary neighbors. Both new structures have been designed in a T-shape with lower portions three floors and back portions ten floors in height. Air conditioning for the Capitol and the two new buildings will be housed in the State Office Building for economy both of installation and operation.

The Master Plan Drawing furnished the Texas State Building Commission by a firm of city planning consultants envisions the Capitol Building shepherding two perpendicular rows of proposed buildings from the Capitol north to Nineteenth Street, the end boundary accented by a Memorial Court of Honor. San Jacinto Street on the east and Lavaca Street on the west are other boundaries.

The Fifty-fifth Legislature this year appropriated the sum of $2½ million for a State Archives and Library Building and also directed the State Building Commission to obtain a site for and build an Insurance Building. Location of these structures, though not definitely decided, will be selected from within what the Commission calls the Capitol Campus.

# ENGINEERING SHOW

***Ross L. Fitzpatrick, Senior Draftsman***
***District 21***

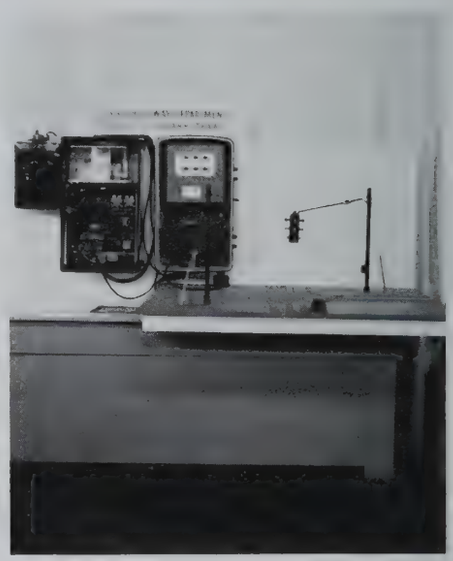
The Pan American College Engineers' Society and the Rio Grande Valley Chapter of the T.S.P.E. were the joint sponsors of a Science and Engineering Show held on Pan American College Campus at Edinburg, Texas, April 4 and 5, 1957.

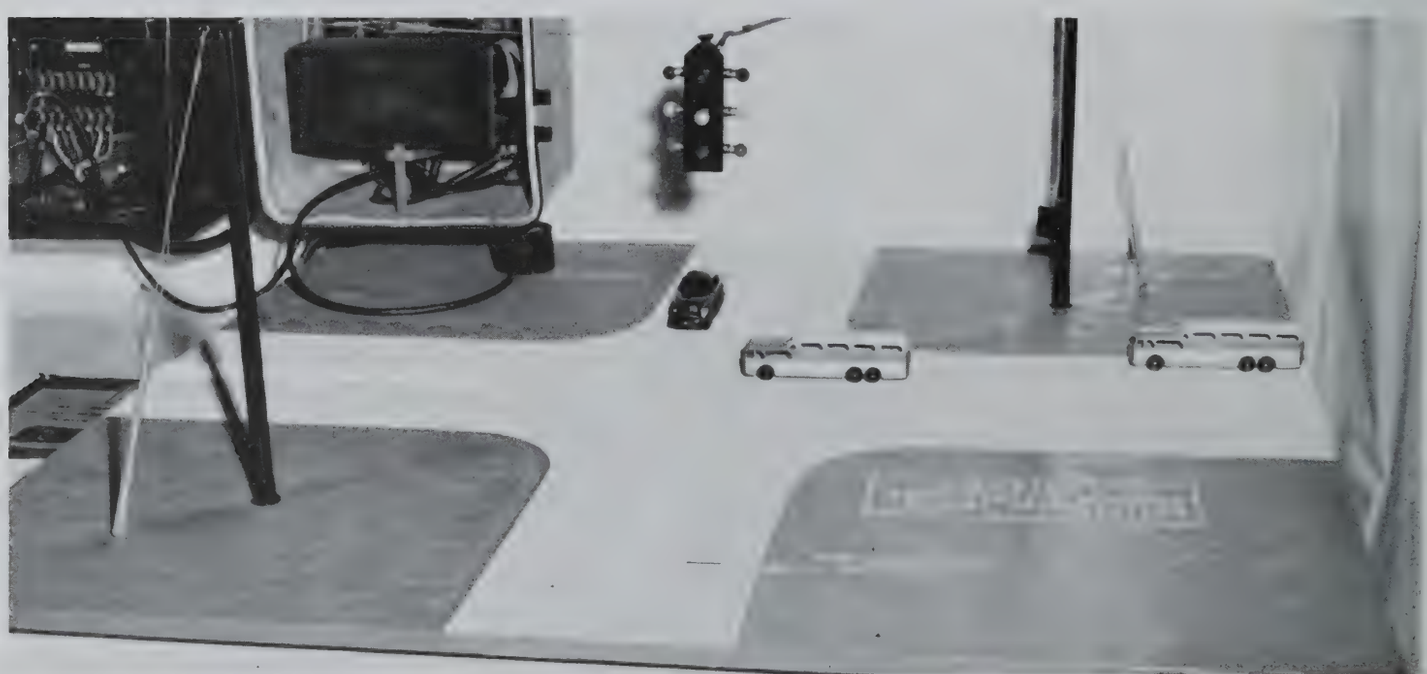
This show was attended by a large group of spectators from all over the Valley. The many commercial exhibits housed in the school gym were actual working models of modern scientific and engineering achievements in use today.

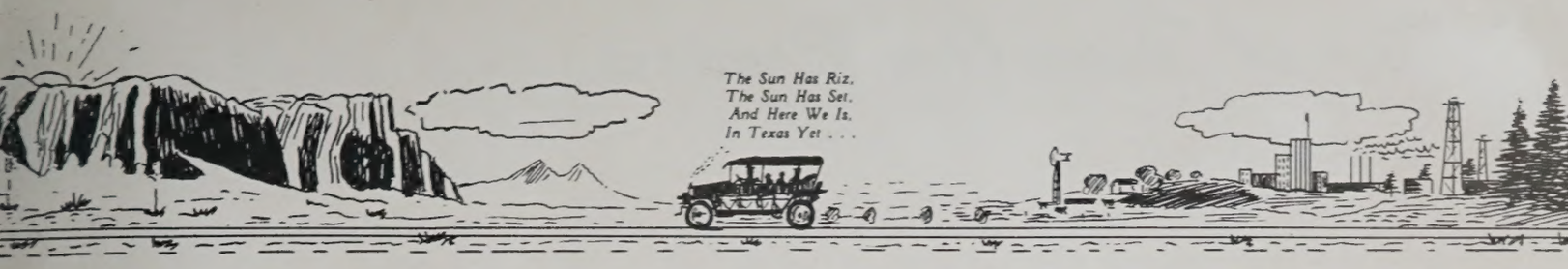
A small-scale semi-actuated traffic signal installation was furnished by this District; and the operation in the art of controlling traffic with this device was explained by attendants Leonard Davis and Vivian Scribner from our District Traffic Shop.

The actuation of the signal was achieved by mounting a full-size magnetic vehicle detector under the cross-street approach and placing a magnet in a toy vehicle. The vehicle was then passed over the detector, thus operating the mechanism in the controller—which changed the green light on the main artery to the side street. The door to the control cabinet was removed for better observation.

This exhibit and the small-scale freeway exhibited by D-16 met with great success.








# OVER THE HIGHWAYS

## Comments . . . from the Traveling Public

● Did you know that you have an outstandingly attractive gateway monument at Waskom, due in large part to your care of the flowers? I enclose a kodak shot of it that I took. This would have been still more attractive in color. To make it still more of an artistic composition, the gracious young ladies of your office might pose in the picture—but then nobody would notice the flowers.

Clarendon Ions
New Orleans, Louisiana

◈ *You're right! See page 10 for proof.*

● You have poorly marked roads for night driving, so one never knew if he were on the road or not. Very dangerous!!!

Los Angeles, California

● California has its Golden Gate, but the Lone Star State has open skies with the brightest stars lighting the way on all of its beautiful highways. . . .

J. D. Farrington
Houston, Texas

● The Information Bureaus were one of the features we liked in the state, also the traffic control systems —in Houston especially, and in Dallas. Also the disposal bags given out at the Bureau. We had one to start but on a long trip such as the one we were on it was worn out. The one given us was heavy enough to last us the rest of our trip. . . .

Louis L. Jourdain
Long Beach, California

● On July 20 and 21 I was traveling through your state and visited two of your roadside parks, which my family really enjoyed. However, I misplaced a canvas handbag filled with shoes, which had my name on it. I was wondering if by chance they were turned in. Our first stop was at the park at the junction of U. S. 90 and State 17 from Pecos. The other stop was on U. S. 90 near Flatonia between there and Luling. If by chance this bag is found, would it be too much trouble to mail same to me by C.O.D. . . . Thank you for having such nice roadside parks along our way.

James P. Spurlock
735 Longwood Dr. N.W.
Atlanta 5, Georgia

● I am dropping you these fateful lines asking you to send some cowboys for us. The booklet you sent to me shows what Red Indians do to the fort. I know they are very dangerous but I can still help you to fight any war. I often see pictures but please come quickly for me and some boys. The boys really want to come to Texas to be Texas cowboys. Please faithfully address me to St. Patricks Anglican School. About 20 boys I have. We can do damage to the Indians for you. Please don't delay with my reply.

On your reply I will say how far to come in the district.

Charles E. Taylor
Adephli Village
British Guiana

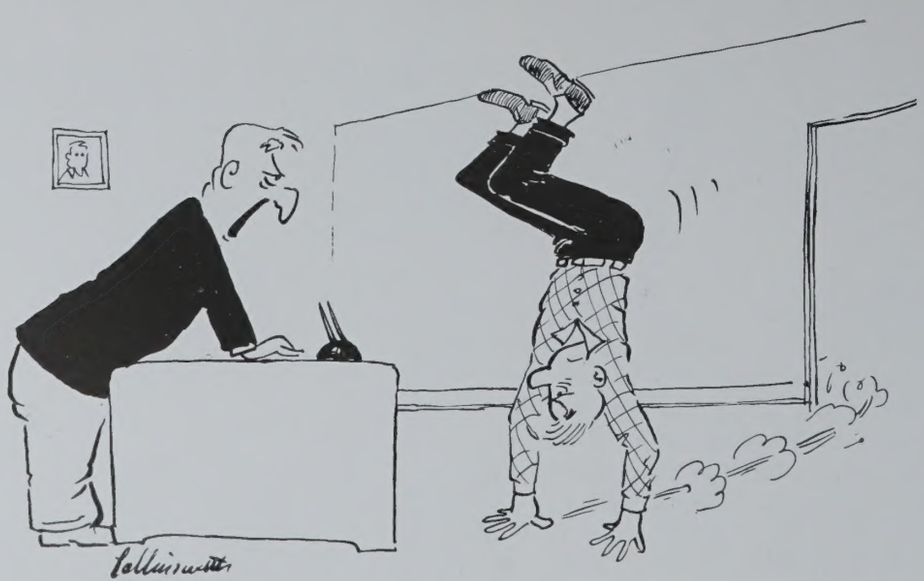
# To and From Our Readers

What becomes of retired Highway Department employees? Do they sit and rock, or go fishing every day? Not J. D. Rice, at any rate. After 30.79 years with Texas highway building, Rice is now in Nicaragua —building roads. Excerpts from a letter he wrote present aspects of daily work in Nicaragua.

● We have more or less modern equipment, but not nearly enough. The workmanship is good, but slow. A modern distributor is here, but no mechanical spreaders. They use lots of hand-labor methods, but do a good job. Compaction of fills is not done according to our standards due to lack of equipment. However, quite some time elapses before roads are paved and so we get some compaction from traffic. Bridge work is good, and modern design is used. At present I am working on a job between La Virgen and Penas Blancos where we have ten bridges under contract. On this road—Inter-American Highway —there are no big cuts and fills as the road is very close to the shore of Lake Nicaragua. In this lake, about twelve miles out is an island—Omatepe—on which a volcano is located. Recently it started quite a large eruption and is still at it. My room is right on the edge of the lake where there is nothing between me and the volcano but a short expanse of water. Sometimes at night the fireworks are beautiful.

I have several troops of "Mono Carta Blanco" (monkey with the white face) which play along the road at times. Also Iguanas are plentiful. The natives eat them, but they look like enlarged horned frogs to me. We killed two seven-foot boas in the Camp at La Sirena, but I have not had them at La Virgen. I have seen a number of fer-de-lance and coral snakes, but so far I have not run foul of any. I did find a poisonous snake in my room one night, but can't give you the name. I know what I called him as I did not sleep so good. . . .

J. D. Rice,
Apartago 273,
Managua, Nicaragua



"But Fezby, you've got to have a doctor's certificate saying your feet hurt before I can let you off!"

## About the Cover . . .

No, these aren't creatures from the Blue Lagoon, or men from Mars. They are just more Highway Department employees doing their job. Their colors come from having a colorful job. Virgil Ingram, left, and Harold J. Ringer, right, are two of the painters on the Neches River High Bridge. Both gentlemen have a look of fearlessness and courage, which would seem to go hand in hand with their job. At 230 feet above ground, Gulf winds play havoc with paint, blowing it back across the painter's face and clothes, splattering his goggles, and making his job far from humdrum. For more information concerning this daredevil job, see our story on page 2, of just another facet in highway work.

*Photograph by Doug Fairchild.*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TEXAS HIGHWAYS, official journal of the Texas Highway Department, is published in the interest of highway development in Texas and for departmental education in the improvement of construction, maintenance, and operation.

All material and manuscripts should be directed to the Editorial Office, Division of Information and Statistics, Texas Highway Department, Austin 14, Texas.

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# DO YOU KNOW TEXAS?

## The Woman In Blue

***Gordon K. Shearer***
***State Parks Board***

Twelve miles southwest of Alto on State Highway 21, a little road leads to the site of an early mission to the Indians from which Texas got its name. A most remarkable story is recorded about the founding of this Spanish mission in East Texas.

It is the story of the Woman in Blue. She first is mentioned by that name in the records of the Isleta mission. Tejas Indians came there in 1639 A.D., and told the Franciscan fathers the Woman in Blue had told them to come and ask that missionaries be sent to their tribe.

It was many years later that their request was granted. Spain by then was jealously eyeing French settlements in East Texas. A military guard was furnished to accompany Father Massanet and other priests from Guadalajara, Mexico, to the land of the Tejas Indians.

Upon arrival, the missionaries found the Indians surprisingly familiar with Christian doctrines. A chief said they had been instructed by the Woman in Blue. She had visited them many times, he said. He did not know who she was nor from whence she came; only that she wore a blue cloak.

Long after, Father Alonzo de Benavides, former custodio of New Mexico, returned to Spain. He reported that he had found the Woman in Blue. She was Maria de Jesus de Agreda, Abbess of the Convent of the Immaculate Conception at Agreda, Spain.

She narrated to Father Alonzo that the Lord took her while she was in ecstatic contemplation and without her being aware of the means, she found herself among strange people in a different country. The natives were able to understand her and she could understand their native tongue. This miracle of bilocation was supported by a peculiarity of the dress of the occupants of the convent. Over the usual habit of Franciscans, they wore a cloak of "blue cloth, coarse, with a black veil."

The mission lasted about three years. On October 25, 1693, fire was applied to the buildings and, after burying the bells, Father Massanet and the other priests returned to Guadalajara. But in that short time, the Indians gave their name to Texas. Their friendliness inspired the state motto: FRIENDSHIP. The mission site now is a state historic park.